CompuChem

A Division Of

Liberty Analytical Corp.

8/22/2014

SMITA SUMBALY

WESTON SOLUTIONS

1090 KING GEORGES POST RD. SUITE 201

EDISON, NJ 088373703

Subject:

Report of Data - Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

WorkOrder: 1408028 RIC

Attn.: SMITA SUMBALY

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER OF PAGES 62

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

325673

CompuChem, a division of Liberty Analytical

Client: WESTON SOLUTIONS **Work:** 1408028

Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ **Sdg:** 1408028

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1408028-01	P001-COMP02-LW-01	Soil	08/06/2014 00:00	08/12/2014 08:58
1408028-02	P001-DR0502-LW-01	Soil	08/06/2014 00:00	08/12/2014 08:58

ANALYSES DATA PACKAGE COVER PAGE

Client: WESTON SOLUTIONS

Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Laboratory: COMPUCHEM

SDG: 1408028

Client Sample Id:	Analysis:	Lab Sample Id:
P001-COMP02-LW-01	EPA 9034	1408028-01
P001-COMP02-LW-01	9014	1408028-01
P001-COMP02-LW-01	EPA 1010A	1408028-01
P001-DR0502-LW-01	EPA 9034	1408028-02
P001-DR0502-LW-01	9014	1408028-02
P001-DR0502-LW-01	EPA 1010A	1408028-02

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions addressed in the narrative. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Susan W Bass Name: Susan Bass

Date: 08/20/2014 Title: Chemist III

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ACCREDITED IN ACCORDANCE WITH nelac

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

I. SAMPLE DATA PACKAGE

The Sample Data Summary Package shall contain data for all samples in one Work Order/Sample Delivery Group (SDG), as follows:

A. SDG Narrative

B. Chain of Custody Records

C. Sample Preparation and Analysis Holding Time Data
(HOLDING TIME SUMMARY)

D. MDL
(MDL SUMMARY)

E. Laboratory Control Sample Results
(LCS/LCS DUPLICATE RECOVERY)

F. Matrix Spike Results
(MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY)

G. Duplicate Results
(DUPLICATES)

H. Batch Summary
(PREPARATION BATCH SUMMARY)

I. Analysis Sequence Summary
(ANALYSIS SEQUENCE SUMMARY)

J. Target Compound Results
(ANALYSIS DATA SHEET)

K. Initial and Continuing Calibration Data
(INITIAL CALIBRATION DATA)
(INITIAL and CONTINUING CALIBRATION DATA)

L. Method and Instrument Blank Results
(BLANKS)

M. Run Logs/Raw Data

N. Digestion and Distillation Logs

O. Standard Info / Internal CoC Documents

A. SDG Narrative

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SDG NARRATIVE
SDG # 1408028
Client: WESTON SOLUTIONS
Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

The 2 liquid samples were received intact, at 24.5°C, with proper documentations, in sealed shipping containers, on August 12, 2014. The samples were scheduled for the requested analyses of the Wet Chemistry fraction for reactive cyanide, reactive sulfide, corrosivity, and ignitability. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client. Samples P001-COMP02-LW-01 and P001-DR0502-LW-01could not be analyzed for corrosivity due to inconsistent readings on the pH meter.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

INSTRUMENTAL QUALITY CONTROL:
All calibration verification solutions (ICV & CCV) associated with this data was confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS, LCSSD, & Blank) were found to be within acceptable ranges. The field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
No matrix spikes were requested for these samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W Bass

Susan W. Bass
Senior Chemist
August 20, 2014

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

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WET CHEMISTRY DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, or CCV) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

The extensions: D, S, and SD are added to the end of the Client ID and represent the following:

D – Matrix Duplicate
S – Matrix Spike
SD – Matrix Spike Duplicate

Revision 0 (03-15-2011)

B. Chain of Custody Records

The laboratory shall include a copy of the Chain-of-Custody (CoC) documentation for all of the samples in the Work Order/SDG. The CoC documents shall be arranged in increasing Client Sample ID number order, considering both letters and numbers.

USEPA
DateShipped: 8/6/2014
CarrierName: FedEx
AirbillNo: 502978208656

CHAIN OF CUSTODY RECORD
Case #: 306
Contact Name: Peter Lisichenko
Contact Phone: 6035124350

No: 2-080614-131105-0004
Cooler #: 2A
Lab: Compuchem Labs Inc.
Lab Phone: 919-379-4089

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
1408028-01	P001-COMP02-LW-01	Area03	VOCs	Liquid Waste	8/6/2014	1	4 oz	None	N
	P001-COMP02-LW-01	Area03	SVOC+PCB+PEST	Liquid Waste	8/6/2014	1	8 oz	None	N
	P001-COMP02-LW-01	Area03	RCRA	Liquid Waste	8/6/2014	1	8 oz	None	N
	P001-COMP02-LW-01	Area03	METALS+Hg	Liquid Waste	8/6/2014	1	500 ml	None	N
1408028-02	P001-DR0502-LW-01	Area05	VOCs	Liquid Waste	8/6/2014	1	4 oz	None	N
	P001-DR0502-LW-01	Area05	SVOC+PCB+PEST	Liquid Waste	8/6/2014	1	8 oz	None	N
	P001-DR0502-LW-01	Area05	RCRA	Liquid Waste	8/6/2014	1	8 oz	None	N
	P001-DR0502-LW-01	Area05	METALS+Hg	Liquid Waste	8/6/2014	1	500 ml	None	N

Special Instructions: RFP 306
Analyze upper phase of liquids

rec'd @ 24.5°C
(ambient in cen)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
ALL SAMPLES ALL ANALYSIS	(WESTON)	8/6/14	Compuchem	8/12/14 0855	good condition 8/12/14

Precautionary Measures Against Hidden Hazards in Laboratory Samples

Notice to Laboratory Personnel

Background

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, as amended, Section 311 of the Clean Water Act (CWA), as amended, by the Oil Pollution Act of 1990 (OPA), Subtitle I of the Resource Conversation and Recovery Act (RCRA), and pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Presidential Decision Document (PDD) #39, the Environmental Protection Agency (EPA) has been delegated the responsibility to undertake response actions with respect to, as a general matter, the release or threat of release of oil, petroleum products, hazardous substances, or pollutant and contaminants, that pose an actual or potential threat to human health or welfare, or to the environment. EPA is responsible for conducting evaluations and cleanups of uncontrolled hazardous substance disposal sites and placing those that are considered to pose a significant threat to the public health or the environment on the National Priorities List (NPL).

EPA's successful implementation of these emergency response action responsibilities requires that technical support capabilities be provided in the form of a contracted Removal Support Team (RST) for EPA. The WESTON RST Contract EP-W-06-072, provides this support to EPA Region II.

Hazard Communication

The samples which accompany this notice were shipped to your laboratory for analysis in accordance with applicable D.O.T. or IATA Regulations and were collected by the WESTON RST and tentatively designated by the field response team, as either environmental or hazardous material samples.

In general, *Environmental Samples* are collected from streams, farm ponds, small lakes, wells, and off-site soil locations that are not reasonable expected to be contaminated with hazardous materials. Samples of on-site soils or water, and materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are considered *Hazardous Samples*. Samples which are obtained from a known radioactive material contamination site or which demonstrate beta or gamma activity greater than three times average background as scanned with a radiation survey meter are considered *Radioactive Samples*.

The samples which accompany this notice were tentatively classified by the field response team as:

_____Environmental XXX Hazardous _____ Comb. (Enviro. & Hazard.) _____ Radioactive

The field team which collected the samples, used the following Level(s) of personal protection as designated by EPA and OSHA conventions to provide protection against possible radiological or chemical exposure:

_____ Level A XXX Level B _____ Level C _____ Level D

The information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The Sample classification(s) and Levels of personal protection used by the WESTON RST are not represented to be, nor are they adequate or applicable in all situations, nor are they intended to serve as substitutes for professional/personal judgment.

Laboratory Name CompuChem *RFP No.* 306
Prepared by: Lisichenko, P *Date* 8/6/2014

WESTON Office: Region II RST, Edison, NJ; Phone: 732-585-4400 Fax: 732-225-7037

GUIDE [illegible] PRODUCTS
140

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- These substances will accelerate burning when involved in a fire.
- Some may decompose explosively when heated or involved in a fire.
- May explode from heat or contamination.
- Some will react explosively with hydrocarbons (fuels).
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

HEALTH

- Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

Small Fire

- Use water. Do not use dry chemicals or foams. CO_2 or Halon® may provide limited control.

Large Fire

- Flood fire area with water from a distance.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Move containers from fire area if you can do it without risk.

Fire Involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Do not get water inside containers.

Small Dry Spill

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Liquid Spill

- Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Following product recovery, flush area with water.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

1408028

COMPUCHEM

Client:	**WESTON SOLUTIONS**	**Project Manager:**	**Cathy Dover**
Project:	**RST2/RFP306/EP-S2-14-01/SITE ID:ZZ**	**Project Number:**	**RST2/RFP306/EP-S2-14-01/SITE ID:ZZ**
SDG:	**1408028** **CASE:**	**Status:**	**Batched**

Report To:
WESTON SOLUTIONS
SMITA SUMBALY
1090 KING GEORGES POST RD. SUITE 201
EDISON, NJ 088373703
Phone: (732) 225-6116
Fax: -

Invoice To:
WESTON SOLUTIONS
SMITA SUMBALY
1090 KING GEORGES POST RD. SUITE 201
EDISON, NJ 088373703
Phone :(732) 225-6116
Fax: -

Date Due: 08/25/2014 00:00 (13 day TAT)

Received By: Cathy Dover — Date Received: 08/12/2014 08:58

Logged In By: Cathy Dover — Date Logged In: 08/12/2014 12:56

J & B Flags?: **YES**	TICS?: **EPA-TICS**	Deliverable: **Level 4**	EDD : **61) CUSTOM EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

LCS/LCSD*CAUTION WASTE DRUM SAMPLES*NOTE SAMPLE COMMENTS FOR INST(MSDS ATTACHED)*NO DRY WEIGHTS*TCL4 VOA 5PPB+EPA-LIKE TICs(MAY NEED MED.LEVEL)*SVOC 8270D TCL4+EPA-LIKE TICs,TCL PEST8081B & TCL PCB8082A ARE ALL DILUTE-N-SHOOT*TAL METALS 6010C+Hg 7471B*RIC

Analysis	Due	TAT	Expires	Received	Comments
1408028-01 P001-COMP02-LW-01 [Soil] Sampled 08/06/2014 00:00 Eastern					**USE ONLY UPPER PHASE OF SAMPLE**
VOA-8260B 5PPB	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=VOA- TCL4 (08-08-14)
7470A 7471B Mercury	08/25/2014 16:00	13	09/03/2014 00:00	08/12/2014 08:58	
CORROSIVITY 9040B-9040C	08/25/2014 16:00	13	08/18/2014 00:00	08/12/2014 08:58	
GC-8081B PEST Dilute-n-Shoot	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=GC- 8081 TCLnoPCB (08-08-14)
GC-8082A PCB DILUTE-N-SHOOT	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=GC- 8082 8082 (08-08-14)
IGNITABILITY 1010A	08/25/2014 16:00	13	09/03/2014 00:00	08/12/2014 08:58	
REACTIVE CYANIDE 9014	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	
REACTIVE SULFIDE 9034	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	
Solids, Dry Weight	08/25/2014 16:00	13	02/02/2015 00:00	08/12/2014 08:58	
6010C METALS	08/25/2014 16:00	13	02/02/2015 00:00	08/12/2014 08:58	
SVOC 8270D Dilute-n-shoot	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=SV- TCL4 (08-08-14)

WORK ORDER

Printed: 8/14/2014 11:38:19AM

1408028

COMPUCHEM

Client:	**WESTON SOLUTIONS**	**Project Manager:**	**Cathy Dover**
Project:	**RST2/RFP306/EP-S2-14-01/SITE ID:ZZ**	**Project Number:**	**RST2/RFP306/EP-S2-14-01/SITE ID:ZZ**
SDG:	**1408028** **CASE:**	**Status:**	**Received**

Date Due: 08/25/2014 00:00 (13 day TAT)

Received By: Cathy Dover — Date Received: 08/12/2014 08:58

Logged In By: Cathy Dover — Date Logged In: 08/12/2014 12:56

J & B Flags?: **YES**	TICS?: **EPA-TICS**	Deliverable: **Level 4**	EDD : **61) CUSTOM EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

LCS/LCSD*CAUTION WASTE DRUM SAMPLES*NOTE SAMPLE COMMENTS FOR INST(MSDS ATTACHED)*NO DRY WEIGHTS*TCL4 VOA 5PPB+EPA-LIKE TICs(MAY NEED MED.LEVEL)*SVOC 8270D TCL4+EPA-LIKE TICs,TCL PEST8081B & TCL PCB8082A ARE ALL DILUTE-N-SHOOT*TAL METALS 6010C+Hg 7471B*RIC

Analysis	Due	TAT	Expires	Received	Comments
1408028-02 P001-DR0502-LW-01 [Soil] Sampled 08/06/2014 00:00 Eastern					**USE ONLY UPPER PHASE OF SAMPLE**
7470A 7471B Mercury	08/25/2014 16:00	13	09/03/2014 00:00	08/12/2014 08:58	
6010C METALS	08/25/2014 16:00	13	02/02/2015 00:00	08/12/2014 08:58	
CORROSIVITY 9040B-9040C	08/25/2014 16:00	13	08/18/2014 00:00	08/12/2014 08:58	
GC-8081B PEST Dilute-n-Shoot	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=GC- 8081 TCLnoPCB (08-08-14)
GC-8082A PCB DILUTE-N-SHOOT	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=GC- 8082 8082 (08-08-14)
IGNITABILITY 1010A	08/25/2014 16:00	13	09/03/2014 00:00	08/12/2014 08:58	
REACTIVE CYANIDE 9014	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	
REACTIVE SULFIDE 9034	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	
Solids, Dry Weight	08/25/2014 16:00	13	02/02/2015 00:00	08/12/2014 08:58	
SVOC 8270D Dilute-n-shoot	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=SV- TCL4 (08-08-14)
VOA-8260B 5PPB	08/25/2014 16:00	13	08/20/2014 00:00	08/12/2014 08:58	SubList=VOA- TCL4 (08-08-14)

C. Sample Preparation and Analysis Holding Time Data

(HOLDING TIME SUMMARY)

Sample collection, receipt, preparation and analysis dates with method holding time requirements.

HOLDING TIME SUMMARY

9014

Client: WESTON SOLUTIONS

Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

SDG: 1408028

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
P001-COMP02-LW-01	08/06/14	08/12/14	08/18/14	08/18/14	12.4	14	
P001-DR0502-LW-01	08/06/14	08/12/14	08/18/14	08/18/14	12.4	14	

HOLDING TIME SUMMARY

EPA 1010A

Client: WESTON SOLUTIONS

Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

SDG: 1408028

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
P001-COMP02-LW-01	08/06/14	08/12/14	08/14/14	08/14/14	8.6	28	
P001-DR0502-LW-01	08/06/14	08/12/14	08/14/14	08/14/14	8.6	28	

HOLDING TIME SUMMARY

EPA 9034

Client: WESTON SOLUTIONS

Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

SDG: 1408028

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
P001-COMP02-LW-01	08/06/14	08/12/14	08/18/14	08/18/14	12.4	14	
P001-DR0502-LW-01	08/06/14	08/12/14	08/18/14	08/18/14	12.4	14	

D. MDL

(MDL SUMMARY)

METHOD DETECTION AND REPORTING LIMITS

Laboratory: COMPUCHEM **SDG:** 1408028

Client: WESTON SOLUTIONS **Project:** RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Matrix: SOIL **Instrument:** Buret

Analyte	MDL	RL	Units	Method
Reactive Cyanide	1	125	mg/kg	9014
Reactive Sulfide	1	125	mg/kg	EPA 9034

E. Laboratory Control Sample Results

(LCS/LCS DUPLICATE RECOVERY)

LCS/LCSD recovery, relative percent difference and quality control acceptance criteria.

LCS / LCS DUPLICATE SUMMARY

EPA 1010A

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081407-BS1 Matrix: Soil Client ID: WLCSHT Batch: 4081407

ANALYTE	SPIKE ADDED (degree F)	LCS CONCENTRATION (degree F)	LCS % REC.	Q	QC LIMITS REC.
Ignitability by Flashpoint	81.00	80.0	98.8		90 - 110

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LCS / LCS DUPLICATE SUMMARY

EPA 1010A

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081407-BSD1 Matrix: Soil Client ID: WLCSDHT Batch: 4081407

ANALYTE	SPIKE ADDED (degree F)	LCSD CONCENTRATION (degree F)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Ignitability by Flashpoint	81.00	81.4	100	1.73	200		90 - 110

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ACCREDITED IN ACCORDANCE WITH nelac

LCS / LCS DUPLICATE SUMMARY

9014

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081802-BS1 Matrix: Soil Client ID: WLCSTY Batch: 4081802

ANALYTE	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC.	Q	QC LIMITS REC.
Reactive Cyanide	1000	62.4 J	6.24		2 - 37

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LCS / LCS DUPLICATE SUMMARY

9014

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081802-BSD1 Matrix: Soil Client ID: WLCSDTY Batch: 4081802

ANALYTE	SPIKE ADDED (mg/kg wet)	LCSD CONCENTRATION (mg/kg wet)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Reactive Cyanide	1000	62.4 J	6.24	0.00	20		2 - 37

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LCS / LCS DUPLICATE SUMMARY

EPA 9034

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081806-BS1 Matrix: Soil Client ID: WLCSTZ Batch: 4081806

ANALYTE	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC.	Q	QC LIMITS REC.
Reactive Sulfide	1000	381	38.1		33 - 75

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LCS / LCS DUPLICATE SUMMARY

EPA 9034

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081806-BSD1 Matrix: Soil Client ID: WLCSDTZ Batch: 4081806

ANALYTE	SPIKE ADDED (mg/kg wet)	LCSD CONCENTRATION (mg/kg wet)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Reactive Sulfide	1000	381	38.1	0.00	20		33 - 75

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G. Duplicate Results

(DUPLICATES)

DUPLICATES
EPA 1010A

P001-COMP02-LW-01DUP

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081407-DUP1 % Solid: Matrix: Soil Lab Source ID: 1408028-01 Source Sample: P001-COMP02-LW-01

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (degree F)	DUPLICATE CONCENTRATION (degree F)	RPD %	Q	METHOD
Ignitability by Flashpoint	20	*>140*	>140	0.00		EPA 1010A

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H. Batch Summary

(PREPARATION BATCH SUMMARY)

Sample names, cross-referenced with Lab Sample ID's, with sample preparation details.

PREPARATION BATCH SUMMARY

EPA 1010A

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Batch: 4081407 Matrix: Soil Preparation: Default Prep WC

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED
P001-COMP02-LW-01	1408028-01	08/14/14 12:45
P001-DR0502-LW-01	1408028-02	08/14/14 12:45
WLCSHT	4081407-BS1	08/14/14 12:45
WLCSDHT	4081407-BSD1	08/14/14 12:45
P001-COMP02-LW-01DUP	4081407-DUP1	08/14/14 12:45

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PREPARATION BATCH SUMMARY

9014

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Batch: 4081802 Matrix: Soil Preparation: Chapter 7 Prep

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (g)	FINAL VOL/WT (mL)
P001-COMP02-LW-01	1408028-01	08/18/14 10:40	10.0	10.0
P001-DR0502-LW-01	1408028-02	08/18/14 10:40	10.0	10.0
WPBTY	4081802-BLK1	08/18/14 08:39	10.0	10.0
WLCSTY	4081802-BS1	08/18/14 08:39	10.0	10.0
WLCSDTY	4081802-BSD1	08/18/14 08:39	10.0	10.0

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PREPARATION BATCH SUMMARY

EPA 9034

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Batch: 4081806 Matrix: Soil Preparation: Chapter 7 Prep

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (g)	FINAL VOL/WT (mL)
P001-COMP02-LW-01	1408028-01	08/18/14 10:40	10.0	10.0
P001-DR0502-LW-01	1408028-02	08/18/14 10:40	10.0	10.0
WPBTZ	4081806-BLK1	08/18/14 10:40	10.0	10.0
WLCSTZ	4081806-BS1	08/18/14 10:40	10.0	10.0
WLCSDTZ	4081806-BSD1	08/18/14 10:40	10.0	10.0

I. Analysis Sequence Summary

(ANALYSIS SEQUENCE SUMMARY)

ANALYSIS SEQUENCE SUMMARY

EPA 1010A

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Sequence: 4H14010 Calibration: UNASSIGI Instrument: P-M CCT

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
ICV	4H14010-ICV1		08/14/14 13:52:11
P001-DR0502-LW-01	1408028-02		08/14/14 13:52:11
P001-COMP02-LW-01	1408028-01		08/14/14 13:52:11
WLCSDHT	4081407-BSD1		08/14/14 13:52:11
WLCSHT	4081407-BS1		08/14/14 13:52:11
P001-COMP02-LW-01DUP	4081407-DUP1		08/14/14 13:52:11

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ANALYSIS SEQUENCE SUMMARY

9014

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Sequence: 4H19009 Calibration: UNASSIGI Instrument: Buret

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
WLCSDTY	4081802-BSD1		08/18/14 08:39:00
WLCSTY	4081802-BS1		08/18/14 08:39:00
WPBTY	4081802-BLK1		08/18/14 08:39:00
P001-DR0502-LW-01	1408028-02		08/18/14 10:40:00
P001-COMP02-LW-01	1408028-01		08/18/14 10:40:00

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ANALYSIS SEQUENCE SUMMARY

EPA 9034

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Sequence: 4H19010 Calibration: UNASSIGI Instrument: Buret

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
P001-DR0502-LW-01	1408028-02		08/18/14 10:40:00
P001-COMP02-LW-01	1408028-01		08/18/14 10:40:00
WLCSDTZ	4081806-BSD1		08/18/14 10:40:00
WLCSTZ	4081806-BS1		08/18/14 10:40:00
WPBTZ	4081806-BLK1		08/18/14 10:40:00

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J. Target Compound Results

(ANALYSIS DATA SHEETS)

ANALYSIS DATA SHEET

P001-COMP02-LW-01

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 1408028-01 % Solid: Matrix: Soil Sampled: 08/06/14 Received: 08/12/14

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide		1.00	125	1	U	9014	4H19009	8/18/14 10:40
RSULF	Reactive Sulfide		1.00	125	1	U	EPA 9034	4H19010	8/18/14 10:40
CAS NO.	**Analyte**	**Conc. (degree F)**	**MDL**	**RL**	**D.F.**	**Q**	**Method**	**Sequence**	**Analyzed**
IGNIT	Ignitability by Flashpoint	>140			1		EPA 1010A	4H14010	8/14/14 13:52

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ANALYSIS DATA SHEET

P001-DR0502-LW-01

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 1408028-02 % Solid: Matrix: Soil Sampled: 08/06/14 Received: 08/12/14

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide		1.00	125	1	U	9014	4H19009	8/18/14 10:40
RSULF	Reactive Sulfide	10.0	1.00	125	1	J	EPA 9034	4H19010	8/18/14 10:40
CAS NO.	**Analyte**	**Conc. (degree F)**	**MDL**	**RL**	**D.F.**	**Q**	**Method**	**Sequence**	**Analyzed**
IGNIT	Ignitability by Flashpoint	>140			1		EPA 1010A	4H14010	8/14/14 13:52

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ANALYSIS DATA SHEET

WLCSHT

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081407-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (degree F)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
IGNIT	Ignitability by Flashpoint	80.0			1		EPA 1010A	4H14010	8/14/14 13:52

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ANALYSIS DATA SHEET

WLCSDHT

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081407-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (degree F)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
IGNIT	Ignitability by Flashpoint	81.4			1		EPA 1010A	4H14010	8/14/14 13:52

ANALYSIS DATA SHEET

WPBTY

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081802-BLK1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide		1.00	125	1	U	9014	4H19009	8/18/14 8:39

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ANALYSIS DATA SHEET

WLCSTY

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081802-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	62.4	1.00	125	1	J	9014	4H19009	8/18/14 8:39

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ANALYSIS DATA SHEET

WLCSDTY

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081802-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	62.4	1.00	125	1	J	9014	4H19009	8/18/14 8:39

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ANALYSIS DATA SHEET

WPBTZ

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081806-BLK1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide		1.00	125	1	U	EPA 9034	4H19010	8/18/14 10:40

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ANALYSIS DATA SHEET

WLCSTZ

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081806-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	381	1.00	125	1		EPA 9034	4H19010	8/18/14 10:40

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ANALYSIS DATA SHEET

WLCSDTZ

Client: WESTON SOLUTIONS SDG: 1408028 Project: RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Lab ID: 4081806-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	381	1.00	125	1		EPA 9034	4H19010	8/18/14 10:40

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K. Initial and Continuing Calibration Data

(INITIAL CALIBRATION DATA)
(INITIAL AND CONTINUING CALIBRATION CHECK)

M. Run Logs/Raw Data

For each reported value, the laboratory shall include in the data package all raw data used to obtain that value. This applies to all required QA/QC measurements, instrument standardization, as well as all sample analysis results. This does not apply to the quarterly verification of method and instrument parameters submitted as a part of each data package.

Raw data shall be labeled with Client Identification numbers and appropriate codes in order to identify:

- calibration standards, including source and preparation date
- initial and continuing calibration blanks and preparation blanks
- initial and continuing calibration verification standards, , Laboratory Control Sample, and post digestion spike
- diluted and undiluted sample and all weights, dilutions, and volumes used to obtain the reported values
- duplicates
- spikes (indicating standard solutions used, final spike concentrations, and volumes involved).
- instrument used, any instrument adjustments, data corrections or other apparent anomalies on the measurement record, including all data voided or data not used and a brief written explanation
- time and date of each analysis (instrument run logs can be submitted if they contain this information)

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Ignitability - Method 1010

Worksheet 1 T(5) SDG: 1408028 & 1408039 Page 1 of 1

Analyst No.: 2655 Date/Time: 08/14/14 @ 1245

Ambient Barometric Pressure (mm Hg): 754 Sequence No.: 4H14010

Cond	CompuChem No.	Sample Type	Observed Flash Point (F)	Corrected Flash Point (F) Results	Comments
OK	ICV	ICV	81.0	81.4	
OK	4081407/06-BS1	WLCSHT	80.0	80.4	
OK	4081407-BSD1	WLCSDHT	81.0	81.4	
OK	1408028-01	SAMPLE	>140	>140	
OK	4081407-DUP1	SAMPLE	>140	>140	
OK	1408028-02	SAMPLE	>140	>140	
OK	1408039-01	SAMPLE	110.0	110.4	

Corrected Flashpoint = F + 0.06(760-P)	where:	F = observed flashpoint, degrees F	
Method Upper Range = 140°F		P = ambient barametric pressure, mm Hg	
ICV		LCS Ref.	
Ref. No. Chlorobenzene =	LOT#: 4F19043	Ref. No. p-Xylene=	LOT#: 4F26016
Chlorobenzene TV =	82 ± 2°F	p-Xylene TV =	81 ± 2°F

Reviewed By: TAJ Date: 8/14/14

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

7/18/06:jad

Generated on: 8/14/2014 1:40 PM

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Ignitability - Method 1010

Worksheet 1 T(5) SDG: 1408028/39 Page 1 of 1

Analyst No.: 2655 Date/Time: 8-14-14/1245

Ambient Barometric Pressure (mm Hg): 754 Sequence No.: 4H14010

Cond	CompuChem No.	Sample Type	Observed Flash Point (F)	Corrected Flash Point (F) Results	Comments
OK	ICV	ICV	81		
OK	4081407/06-BS1	WLCSHT	80		
OK	4081407-BSD1	WLCSDHT	81		
OK	1408028-01	SAMPLE	>140		
OK	4081407-DUP1	SAMPLE	>140		
OK	1408028-02	SAMPLE	>140		
OK	1408039-01	SAMPLE	110		

Corrected Flashpoint = F + 0.06(760	where:	F = observed flashpoint, degrees F	
Method Upper Range = 140°F		P = ambient barametric pressure, mm Hg	
ICV		LCS Ref.	
Ref. No. Chlorob	LOT#: 4F19043	Ref. No. p-Xylene=	LOT#: 4F26016
Chlorobenzene T	82 ± 2°F	p-Xylene TV =	81 ± 2°F

Reviewed By: TAJ Date: 8/14/14

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

7/18/06:jad

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Reactive Cyanide Preparation and Analysis

Method SW846 Chapter 7/9014

Worksheet 1 B(5) Rev. 1

Analyst No.: 1151

Date: / Time: 8/18/14 10:40

SDG: 1408028

Batch No.: 4081802

Sequence: 4H19009

CompuChem No.	Sample Type	A Initial Sample (kg)	B Total Scrubber Vol. (L)	C Scrubber Vol. Titrated (mL)	D Titrant Vol. (mL)	Results Total Releasable HCN in water/soil (mg/kg)	Reaction Time Start	Reaction Time Stop	Comments
Titration Blank	TBS	NA	NA	NA	0.10	NA	NA	NA	D1 = TBS value in column D
4081802-BLK1	MB	0.01	0.05	20	0.10	0	11:02	11:32	
4081802-BS1	LCS	0.01	0.05	20	0.35	62.448	11:02	11:32	1.0 ML 3B25003 added
4081802-BSD1	LCSD	0.01	0.05	20	0.35	62.448	11:02	11:32	1.0 ML 3B25003 added
1408028-01	SAMPLE	0.01	0.05	20	0.10	0	11:02	11:32	
1408028-02	SAMPLE	0.01	0.05	20	0.10	0	12:00	12:30	
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			

Total Releasable HCN, mg/kg = $\frac{(D - D1) \times 0.0192N\ AgNO_3 \times \frac{1eq.\ AgNO_3}{1\ L} \times \frac{2\ moles\ CN^-}{1eq.\ AgNO_3} \times \frac{26.03g\ CN^-}{1\ mole\ CN^-} \times \frac{1000mg}{1g} \times \frac{B}{A}}{C} = (D - D1) \times 249.7920^{**}$

**when B=0.05 & C=20 & A=0.01

Reviewed By: _____ Date: 08/19/14

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

12/19/12:jcf

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Reactive Cyanide Preparation and Analysis

Method SW846 Chapter 7/9014

Worksheet 1 B(5) Rev. 1

Analyst No.: NSB 151

Date: / Time: 8/15/14 10:40

SDG: 1408028

Batch No.: 4081802

Sequence: 4H19009

CompuChem No.	Sample Type	A Initial Sample (kg)	B Total Scrubber Vol. (L)	C Scrubber Vol. Titrated (mL)	D Titrant Vol. (mL)	Results Total Releasable HCN in water/soil (mg/kg)	Reaction Time Start	Reaction Time Stop	Comments
Titration Blank	TBS	NA	NA	NA	0.10	NA	N/A	N/A	D1 = TBS value in column D
4081802-BLK1	MB	0.010	0.05	20.0	0.10	#DIV/0!	11:02	11:32	
4081802-BS1	LCS	0.010	0.05	20.0	0.35	#DIV/0!	11:02	11:32	added 1.0 mL
4081802-BSD1	LCSD	0.010	0.05	20.0	0.35	#DIV/0!	11:02	11:32	3B25003
1408028-01	SAMPLE	0.010	0.05	20.0	0.10	#DIV/0!	11:02	11:32	
1408028-02	SAMPLE	0.010	0.05	20.0	0.10	#DIV/0!	12:00	12:30	
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			
						#DIV/0!			

Total Releasable HCN, mg/kg = $\frac{(D - D1) \times 0.0192N\ AgNO_3 \times \frac{1\ eq.\ AgNO_3}{1\ L} \times \frac{2\ moles\ CN^-}{1\ eq.\ AgNO_3} \times \frac{26.03g\ CN^-}{1\ mole\ CN^-} \times \frac{1000mg}{1g} \times B}{C} = \frac{(D - D1) \times 249.7920^{**}}{A}$

**when B=0.05 & C=20 & A=0.01

Reviewed By: [signature] Date: 8/19/14

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

12/19/12:jcl

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A Division of Liberty Analytical Corp

Reactive Sulfide Preparation and Analysis

Method SW846 Chapter 7/9034

Date: / Time: 8/18/14 10:40

Worksheet 1 W(5) R1

Analyst No.: 1151

SDG: 1408028

Batch No.: 4081806

Sequence: 4H19010

CompuChem No.	Sample Type	A Initial Sample (kg)	B Total Scrubber Vol. (L)	C Scrubber Vol. Titrated (mL)	D Iodine Added (mL)	E Titrant Vol. (mL)	Results Total Releasable H_2S in water/soil (mg/kg)	Reaction Time Start	Reaction Time Stop	Comments
4081806-BLK1	MB	0.01	0.05	20	1.0	1.00	0.00	11:02	11:32	
4081806-BS1	LCS	0.01	0.05	20	5.0	1.20	380.71	12:00	12:30	10 ML 4H13003 ADDED
4081806-BSD1	LCSD	0.01	0.05	20	5.0	1.20	380.71	12:00	12:30	10 ML 4H13003 ADDED
1408028-01	SAMPLE	0.01	0.05	20	1.0	1.00	0.00	11:02	11:32	
1408028-02	SAMPLE	0.01	0.05	20	1.0	0.90	10.02	12:00	12:30	
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LCS/MS Reference ID: 4H13003

Total Releasable H_2S, mg/kg = $\frac{(D - E) \times \underline{0.025N} \times \underline{32.06\ g} \times \underline{1000\ mg} \times \underline{B}}{C \quad 2\ eq. \quad 1\ g \quad A} = (D - E) \times 100.1875^*$

*when B=0.05 & C=20

Reviewed By: _____ Date: 08/19/14

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

12/19/12 jcf

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Reactive Sulfide Preparation and Analysis

Method SW846 Chapter 7/9034

Date / Time: 8/18/14 1040

Worksheet 1 W(5) R1

Analyst No.: 117

SDG: 1408028

Batch No.: 4081806

Sequence: 4H19010

CompuChem No.	Sample Type	A Initial Sample (kg)	B Total Scrubber Vol. (L)	C Scrubber Vol. Titrated (mL)	D Iodine Added (mL)	E Titrant Vol. (mL)	Results Total Releasable H_2S in water/soil (mg/kg)	Reaction Time Start	Reaction Time Stop	Comments
4081806-BLK1	MB	0.01	0.05	20.0	1.0	1.0	#DIV/0!	11:02	11:32	
4081806-BS1	LCS	0.01	0.05	20.0	5.0	1.2	#DIV/0!	12:00	12:30	210mL 4H13003
4081806-BSD1	LCSD	0.01	0.05	20.0	5.0	1.2	#DIV/0!	12:00	12:30	
1408028-01	SAMPLE	0.01	0.05	20.0	1.0	1.0	#DIV/0!	11:02	11:02	
1408028-02	SAMPLE	0.01	0.05	20.0	1.0	0.9	#DIV/0!	12:00	12:30	
							#DIV/0!			
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							#DIV/0!			

LCS/MS Reference ID: 4H13003

Total Releasable H_2S, mg/kg = $\frac{(D - E) \times 0.025N}{C} \times \frac{32.06\ g}{2\ eq.} \times \frac{1000\ mg}{1\ g} \times \frac{B}{A} = (D - E) \times 100.1875^*$

*when B=0.05 & C=20

Reviewed By: [signature] Date: 08/19/14

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

12/19/12:jcf

N. Digestion and Distillation Logs

The following logs shall be submitted, as appropriate, for each preparation procedure. The logs shall include: (1) date; (2) sample weights and volumes, with initial sample weight/volume and final volume clearly indicated; (3) sufficient information to unequivocally identify which QC samples (i.e., LCS, PB) correspond to each batch digested; (4) comments describing any significant sample changes or reactions which occur during preparation shall be entered in the log and noted in the SDG Narrative; (5) identification of the sample preparer(s) [signature (s)].

Standard Logs

Analytical Standard Parent/Mix Relationships

SDG: 1408028 **Client:** WESTON SOLUTIONS

Case No: **Project:** RST2/RFP306/EP-S2-14-01/SITE ID:ZZ

Received: 08/12/2014 **PM:** SMITA SUMBALY

Work Order: 1408028 **COC:** **Bol Num:**

Standard	Std Mix	Std Mix	Pdf	Description	Prepared	Expires	Solvent	LotNum	Vendor
3B25003			X	NSI Cyanide - 10,000ppm (Q-7104-I)	2/25/13	8/31/14		021213	NSI
4F19043				JT BAKER Chlorobenzene	6/19/14	8/10/20		0000057301	JT Baker
4F26016				JT BAKER P-XYLENE (JT9498-1)	6/26/14	6/21/15		0000067209	JT Baker
4H13003				AQUA SOLN Sulfide Standard 1000mg/L (987	8/13/14	10/10/14		4080401	Aqua Solutions

3B25003

Certificate of Analysis

NSI Solutions, Inc. • 7212 ACC Blvd. • Raleigh, NC 27617 • 1-800-234-7837

Free Cyanide Standard - 10,000 mg/L

Catalog Number: Q-7104-I
Lot Number: 021213
Manufacture Date: 02/12/13

Expiration: 08/31/2014
Matrix: 0.2N NaOH
Hazards: Irritant

Bulk Number	Analyte	Purity	Gravimetric Concentration (mg/L)
W-478-03	Free Cyanide from KCN	99.9%	10,000 ± 17.8

Packaging, Storage, Instructions For Use

Store at room temperature (20-30°C).

This product is packaged in amber glass bottles as a whole volume ready to use sample. No secondary preparative steps are necessary. Shake well prior to use. Small aliquots should be poured out of the bottle rather than directly pipetted out of bottle in order to prevent contamination or premature degradation.

Traceability Information

Analyte Source Materials: The highest purity analyte source materials are used in the manufacture of this standard. The actual purity is referenced above.

Method: This standard was verified gravimetrically.

Balance: All analytical balances are calibrated on a semiannual basis by an ISO 17025 accredited calibration laboratory and are traceable to NIST. Traceable Calibration Certificate available upon request.

All balances are checked daily by an in-house standard operating procedure. The weights used for this daily verification are calibrated annually by an ISO 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calibration and Traceability available upon request.

Thermometer: All thermometers are NIST traceable through thermometers that are calibrated annually by an ISO 17025 accredited calibration laboratory.

Glassware: All glassware used in the manufacture of our standards is Class A. An in-house standard operating procedure is used to verify all glassware prior to it being placed into service. Volumetric pipetors are calibrated every four months by an ISO 17025 accredited calibration laboratory.

Catalog Number: Q-7104-I
Lot Number: 021213

Intended Uses

- Calibration of analytical instruments
- Validation of analytical methods
- Preparation of working level reference materials, i.e. "check standards"
- Detection limit studies

Uncertainty

The ± uncertainty associated with the concentration is the expanded manufacturing uncertainty at 95% confidence interval (CI) with K=2.

Homogeneity

This product was thoroughly mixed in production and is guaranteed homogeneous.

Ewart Morris

Ewart Morris, Inorganics/Microbiologics Dept. Manager

Cynthia K. Loftus

Cynthia K. Loftus, Quality Manager

Mark Hammersla

Mark Hammersla, President

Internal Chain of Custody

7/31/2013

Extractions Chain of Custody Sheet

Dept: PM

Batch: 4081407 **Status:** Batched

Analysis: IGNITABILITY 1010A

Lab Id	Client_Id	Received	Container	Extraction	Preservative	Matrix		
1408028-01 A	P001-COMP02-LW-01	08/12/14	4b_4OZ WM Glass, cool	Default Prep WC	Cool 4°C	Soil		
1408028-02 A	P001-DR0502-LW-01	08/12/14	4b_4OZ WM Glass, cool	Default Prep WC	Cool 4°C	Soil		

Cooler #1	8-14-14/1210	S. Bolton	8-14-14/1210
Relinquished By	Date/Time	Received By	Date/Time
S. Bolton	8-14-14/1320	Cooler #1	8-14-14/1320
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

7/31/2013

Metals Internal Chain of Custody Sheet

Dept: PM

Batch 4081404 / 4081802 **Status:** Batched

Analysis: ILM05.4 - ICP AES (TM) / ILM05.4-ICPAES(MS)

Lab Id	Client_Id	Received	Container	Preparation	Preservative	Matrix		
1408021-02 I	RBGW-080714	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		
1408021-03 I	MW-12S	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		
1408021-04 I	MW-12SFD	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		
1408021-05 I	MW-11S	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		
1408021-06 Z	MW-9S	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		
1408021-07 I	MW-8S	08/08/14	3q_1000mL Plastic, cool, HNO3	HW1	Add HNO3 to pH<2	Water		

Cooler #1	8-19-14/0850	S. Bolton	8-19-14/0850
Relinquished By	Date/Time	Received By	Date/Time
S. Bolton	8-19-14/0945	Cooler #1	8-19-14/0945
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Extractions Chain of Custody Sheet

Dept: PM

Batch: 4081806 **Status:** Batched **Analysis:** REACTIVE SULFIDE 9034

Lab Id	Client_Id	Received	Container	Extraction	Preservative	Matrix		
1408028-01 A	P001-COMP02-LW-01	08/12/14	4b_4OZ WM Glass, cool	Chapter 7 Prep	Cool 4°C	Soil		
1408028-02 A	P001-DR0502-LW-01	08/12/14	4b_4OZ WM Glass, cool	Chapter 7 Prep	Cool 4°C	Soil		

Coolmc	8/18/14 0955	[signature]	8/18/14 0955
Relinquished By	Date/Time	Received By	Date/Time
[signature]	8/18/14 1200	Coolmc	8/18/14 1200
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time